

Application No. 10/005,532
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 3 has been amended to clarify that the photosensor body comprises at least one fiber array constructed by arranging a plurality of separate sensor units as multi-channels, and to clarify the feature of the present invention whereby each of the sensor units comprises a light-applying fiber and a light-receiving fiber which is bundled with the light-applying fiber to form a fiber bundle consisting of one light-applying fiber and one light-receiving fiber, as supported by the disclosure in the specification at, for example, page 8, lines 14-21.

In addition, claim 4 has been amended to more clearly recite the feature of the present invention whereby the at least one fiber array comprises a plurality of the fiber arrays and the sensor units of the fiber arrays are arranged in respective lines such that positional phases of adjacent fiber arrays are shifted with respect to the surface of the disk, as supported by the disclosure in the specification at, for example, page 8, lines 7-13.

No new matter has been added, and it is respectfully requested that the amendments be approved and entered.

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THE PRIOR ART REJECTION

Claims 3 and 4 were rejected under 35 USC 103 as being obvious in view of the combination of USP 5,898,499 ("Pressesky") and JP 08-334471 (referred to by the Examiner as "Toshiyasu et al"). This rejection, however, is respectfully traversed with respect to the claims as amended hereinabove.

The Examiner acknowledges at the bottom of page 2 and top of page 3 of the Office Action that Pressesky does not disclose a fiber array as recited in claim 3. For this reason, the Examiner has cited JP 08-334471 to supply the missing teachings of Presseksy.

It is respectfully submitted, however, that JP 08-334471 does not disclose, teach or suggest the features of the present invention recited in amended independent claim 3.

In particular, it is respectfully submitted that JP 08-334471 does not disclose, teach or suggest a sensor unit including a light-applying fiber and a light-receiving fiber which is bundled with the light-applying fiber to form a fiber bundle consisting of one light-applying fiber and one light-receiving fiber, as according to the present invention as recited in amended independent claim 3.

With the structure of the present invention as recited in amended independent claim 3, light is applied through a light receiving fiber and received through a light receiving fiber such

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that a portion on the surface of the disk where areas corresponding to the two fibers overlap is sensed via the light receiving fiber. See the attached Reference Fig. A.

Therefore, as shown in Reference Fig. B, in which circle 1 corresponds to the light receiving fiber and circle 2 corresponds to the light-applying fiber, according to the claimed present invention an area (a) having a width W_a on the surface of the disk is sensed via the light receiving fiber when light is applied via the light-applying fiber.

According to JP 08-334471, by contrast, a flaw is detected by projecting light through a fiber 13, and by receiving the light reflected from an object through a plurality of receiving fibers, such as fibers 14a and 14b as shown in Fig. 1 of JP 08-334471. That is, according to JP 08-334471 a fiber bundle includes a light projecting fiber and a plurality of light-receiving fibers. And as explained hereinbelow, according to JP 08-334471 the multiple light-receiving fibers are required for the detection operation.

In paragraphs [0009] and [0011] of the English translation submitted herewith, it is explained that in the embodiments of JP 08-334471 reflected light is received into two or more light-receiving fibers of the fiber bundle and is received from the light-receiving fibers by corresponding photosensors. In addition, it is explained that the outputs of the multiple

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photosensors are used to determine whether a flaw is present.
See also the abstract of JP 08-334471.

That is, according to JP 08-334471 the reflected light is received by, for example, two light-receiving fibers of the fiber bundle such that a pair of areas (b) and (b') is inspected with the inspecting light from the light projecting fibers, as shown in Reference Fig. C. In Reference Fig. C, circles 1 and 3 correspond to light-receiving fibers, and circle 2 corresponds to the light projecting fiber. A first area where circles 1 and 2 overlap is indicated by (b) and a second area where circles 2 and 3 overlap is indicated by (b'). With this structure, the area sensed via the light-receiving fibers includes the overlapping and the non-overlapping regions of areas (b) and (b'). Since signal is received from the non-overlapping areas (b) and (b') as well as from the overlapping area thereof, the area inspected when the inspecting light is applied according to JP 08-334471 has a width W_b , which is wider than the width W_a (see Reference Fig. A) of the area inspected with the structure of the claimed present invention.

Thus, the present invention achieves more precise inspection with the reflected light because the area inspected when the inspecting light is applied is more focused according to the present invention than according to JP 08-334471. In addition, it is respectfully pointed out that the structure of the claimed

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present invention allows for the sensor unit to be more compact than according to JP 08-334471.

It is respectfully submitted that JP 08-334471 does not disclose, teach or even remotely suggest performing detection with a sensor unit including a fiber bundle consisting of one light-applying fiber and one light-receiving fiber, in the manner of the present invention as recited in amended independent claim 3.

With respect to claim 4, moreover, it is noted that on page 4 of the Office Action, the Examiner contends that fiber lines 13, 14a and 14b correspond to a plurality of fiber arrays in the manner of the present invention as recited in claim 4.

It is respectfully pointed out, however, that claim 3 clearly recites that each fiber array includes a sensor unit that comprises a light-applying fiber and a light-receiving fiber. Since the Examiner contends that the fiber lines 13, 14a and 14b of JP 08-334471 make up a sensor unit as recited in claim 3, it is respectfully pointed out that each of the respective fibers clearly cannot correspond to a fiber array as recited in claim 4.

In addition, claim 4 has been amended to more clearly recite the feature of the present invention whereby a plurality of the fiber arrays are arranged such that the sensor units of the fiber arrays are arranged in respective lines and positional phases of

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adjacent fiber arrays are shifted with respect to the surface of the disk.

And it is respectfully submitted that JP 08-334471 clearly does not disclose, teach or suggest the features of the present invention as recited in amended claim 4.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claim 3, and claim 4 depending therefrom, clearly patentably distinguishes over the combination of Pressesky and JP 08-334471 under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,



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